School Funding Equity in Korea

Risk and resource analysis of public elementary, middle and general high schools

Bruce D. Baker · University of Miami · October 2026

Resources follow school size, not need

1.01

High-need ÷ low-need classroom teachers per pupil, same office, size and remoteness held constant (middle)

1.01

Same ratio for school-account spending per pupil

21%

Middle-school graduates entering vocational high schools in the highest-need tenth (vs. 9%)

0.95

Elasticity of parent-paid school revenue with respect to district income (elementary)

Teachers are paid on a national scale and posted to schools largely by class. 9,905 public schools, 4.2 million pupils.

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Two questions from the equal-opportunity framework

1a Risk analysis

Which community and school characteristics most strongly predict lower outcomes?

Outcomes = f(Needs, Context)

1b Resource analysis

Are teachers, staff and school budgets higher where risks are concentrated, net of costs?

Resources = f(Needs, Context)

2 Cost modeling (next)

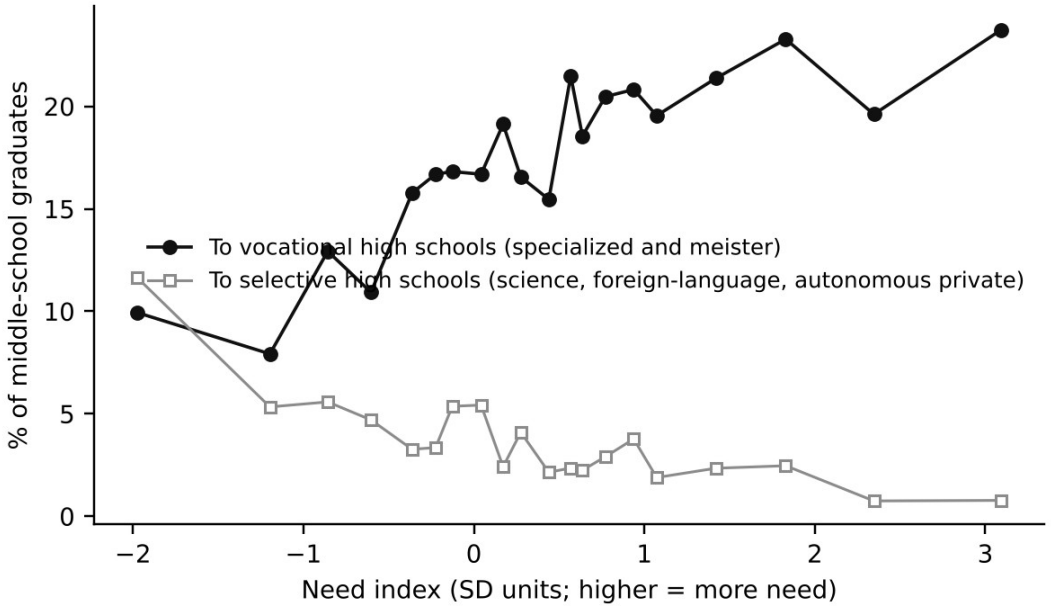
How much more would give high-need schools an equal opportunity to reach common goals?

Sizing the differential

Framework Act on Education, art. 4: the State and local governments must minimize regional gaps in educational conditions, including the supply of teachers (Baker, Atchison & Levin, 2026).

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Risk is measured by progression



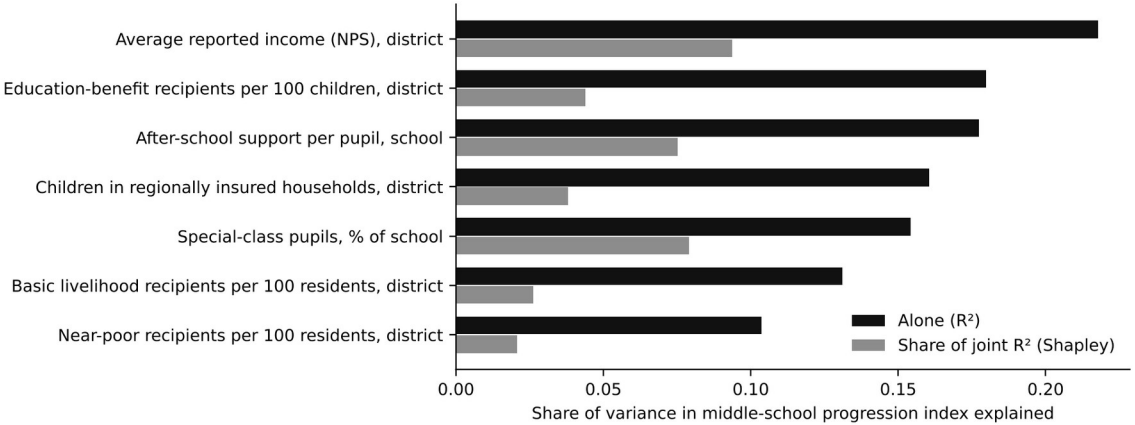
National assessment has been **sample-based since 2017**

Highest-need tenth: **21%** of graduates to vocational, **0.8%** to selective high schools

Lowest-need tenth: **9%** and **8%**

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

District income predicts progression best



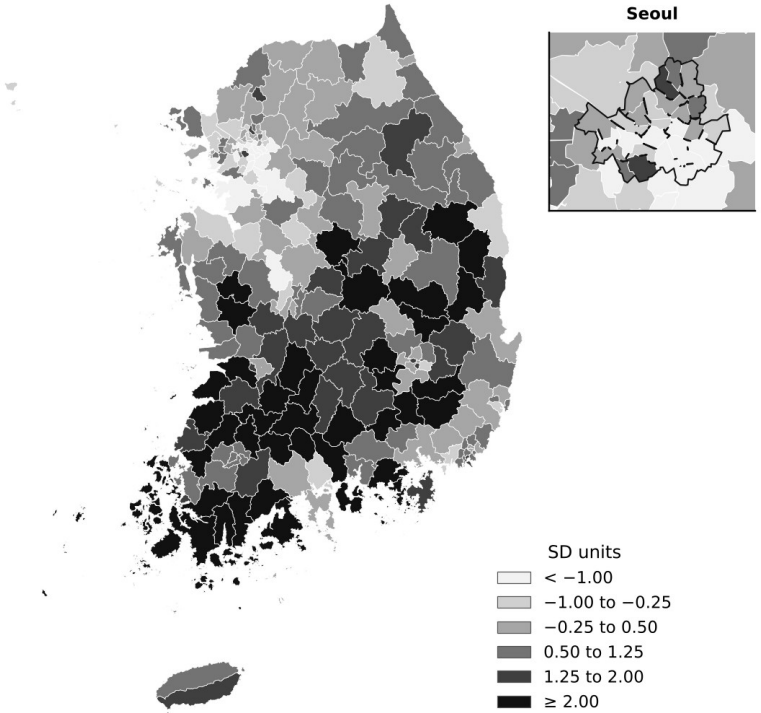
District income alone: **22%** of variation

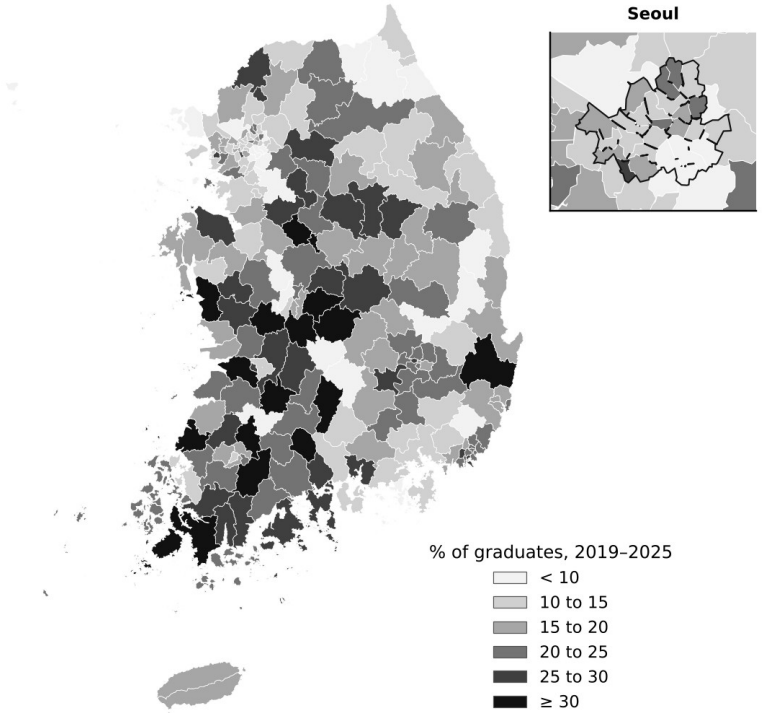
Need index (income + children outside regular employment): cross-validated R^2 **0.24**

No school-level poverty counts are published

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Need is concentrated outside the capital region

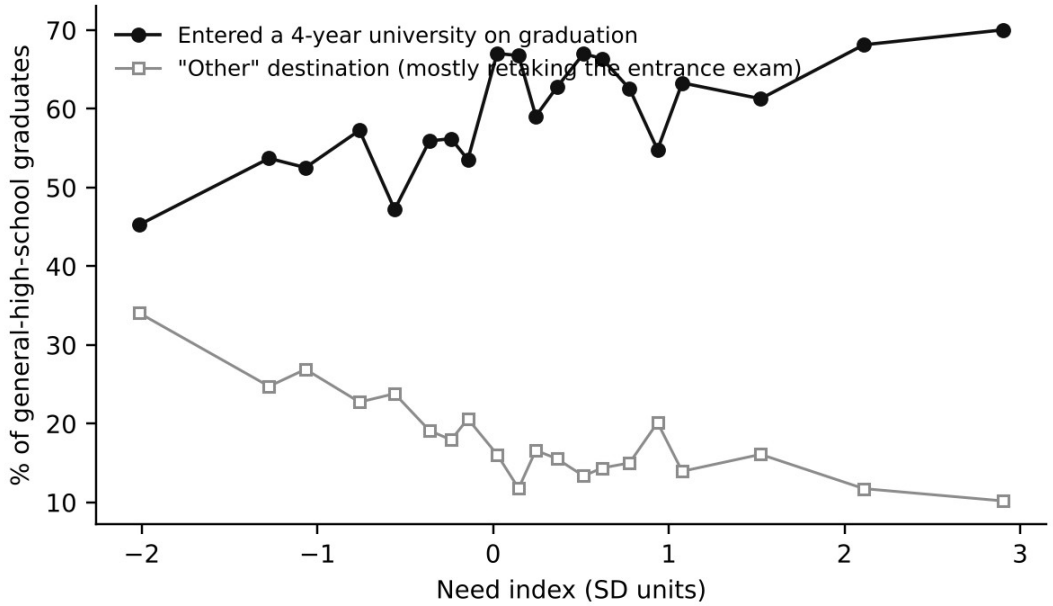




Left: need index by district. Right: % of middle-school graduates entering vocational high schools.

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Immediate university entry is not a valid outcome



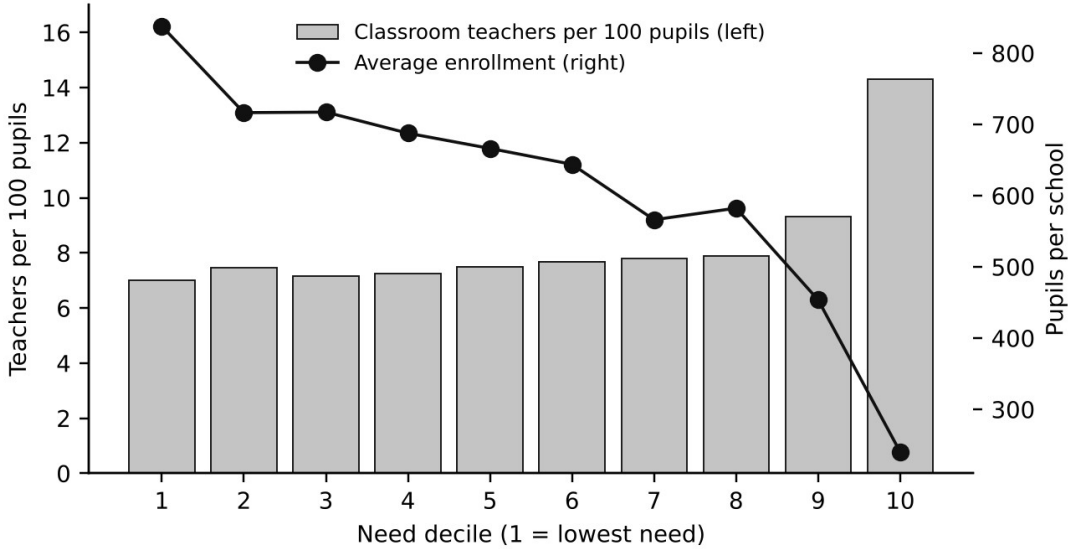
Highest-need tenth: **69%** enter 4-year universities on graduation

Lowest-need tenth: **50%**, because **29%** defer to retake the entrance exam

Used only as a caution, not in the need model

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Raw comparisons flatter the system



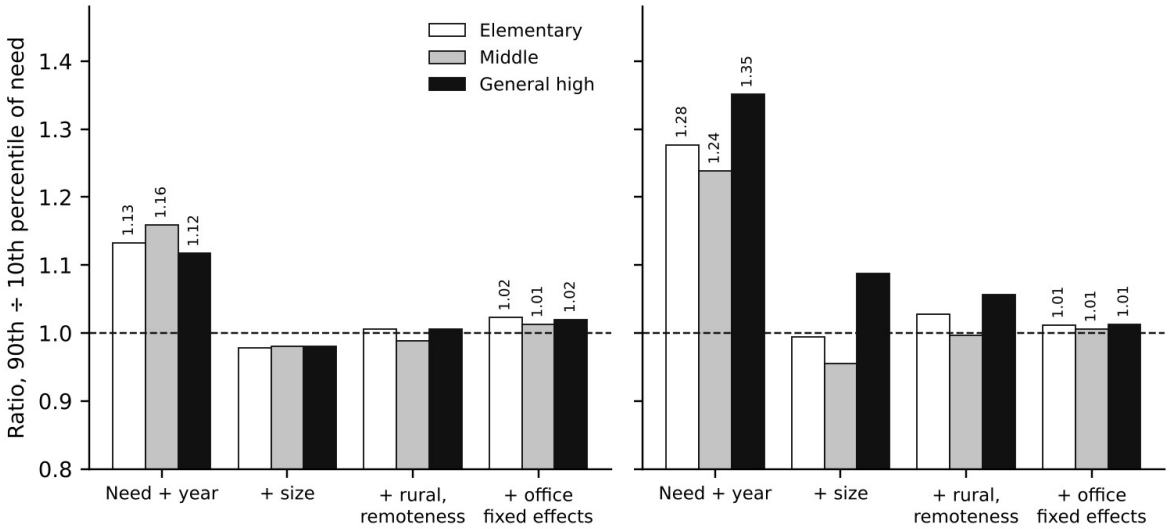
Highest-need tenth of middle schools: **14.3** classroom teachers per 100 pupils vs. **7.0**

But average enrollment **240** vs. **838**

Posts follow classes, so small rural schools get more per pupil

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Once size is held constant, close to need-neutral



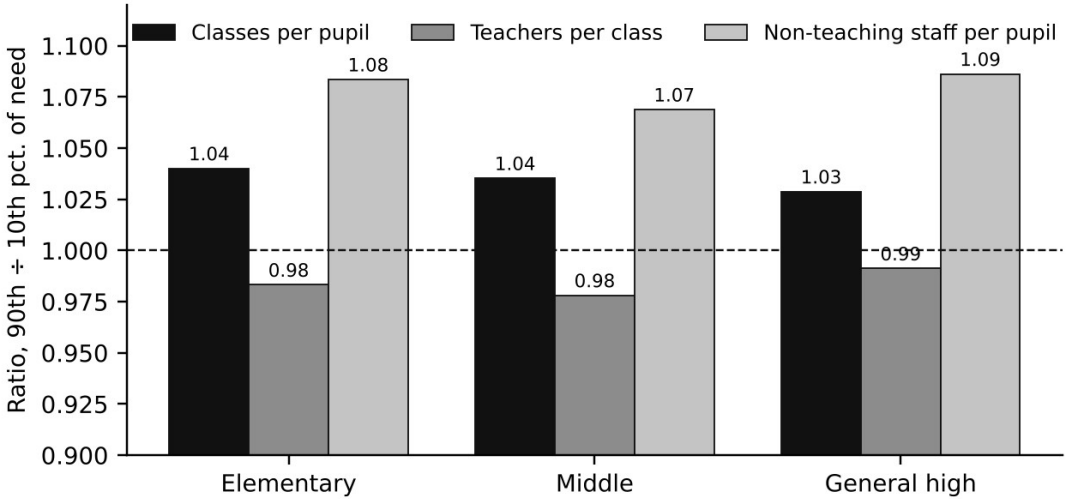
Need and year only: **1.16×** teachers, **1.24×** spending

Add school size: **0.98×**

Within offices: **1.02–1.02×** teachers, about **1.01×** spending

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Small advantages: support staff, not teachers



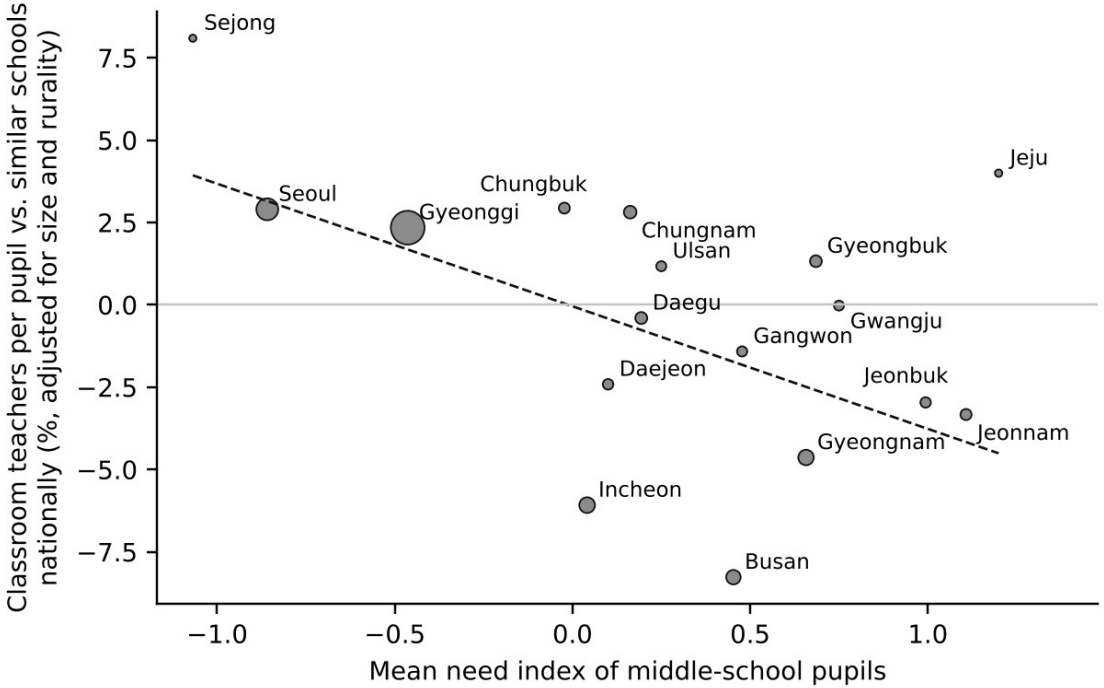
Non-teaching staff: **+7%** to **+9%** in high-need schools

Classes **4%** smaller, but **2%** fewer teachers per class

Teachers slightly less experienced (**+3.3** pts second-grade certificate)

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Between offices, a slight lean against need



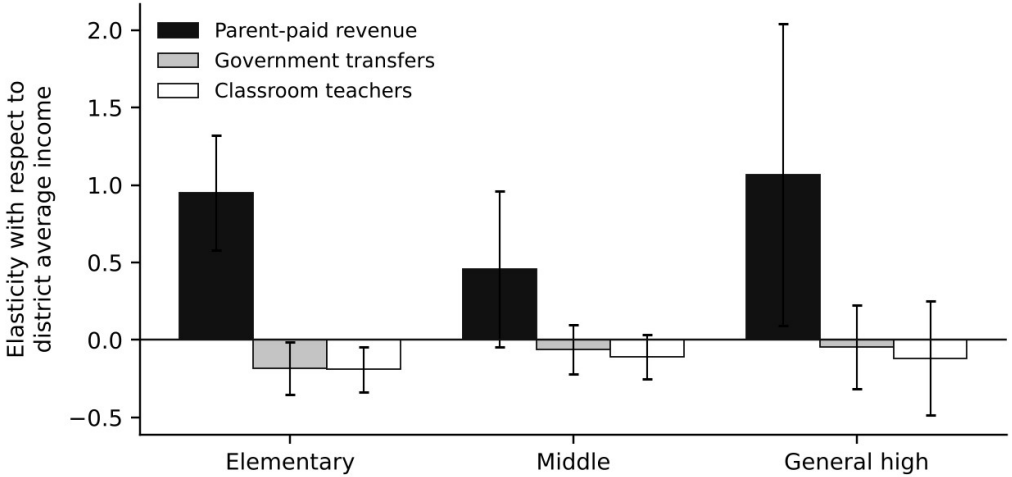
Size-adjusted teachers vs. need: r = **-0.46**

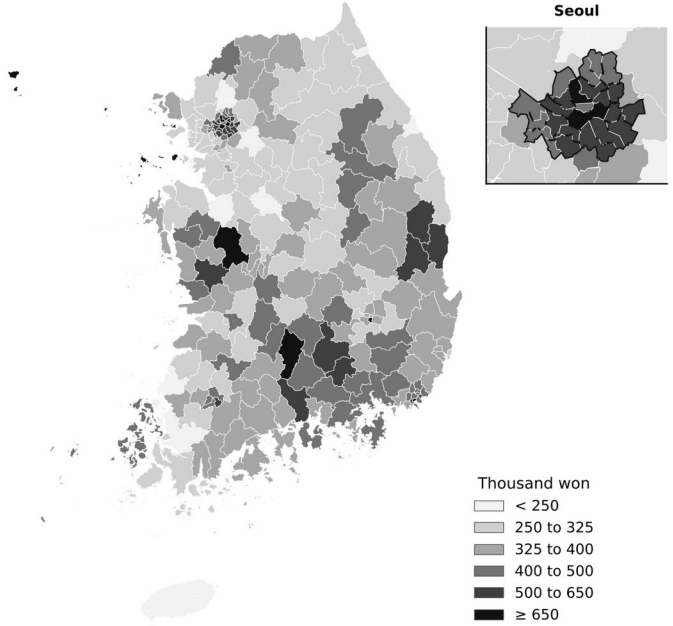
Sejong **+8%**, Seoul **+3%**

Busan **-8%**, Incheon **-6%**, Gyeongnam **-5%**

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Parent payments follow local income





Within offices, parent-paid revenue rises about 10% per 10% of district income (elementary); government transfers do not. Private tutoring, outside the system, is far larger: about 3× more per student in the highest-income households.

Source: B. D. Baker analysis of School Info public disclosures, SSIS, NHIS and NPS district data. Public elementary, middle and general high schools, 2019–2025.

Implications

- Weight allocations by pupil need, in the grant formula and in offices' posting of teachers, not only by classes and schools
- Extend differentiation from support staff and welfare programmes to teaching positions and teacher experience
- Publish school-level counts of education-benefit recipients and school-level assessment results
- Next: cost modeling to size the differential, accounting for the private tutoring gap